

CERTAMEN MELASTOMATACEIS XXVII.

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Most of the current notes are further adjustments for the Flora of Ecuador, with some directly related Colombian problems included. Much of the data is based on studies made as a result of a 1975 trip to European herbaria subsidized by the Smithsonian Research Foundation.

CONOSTEGIA CINNAMOMEA (Beurl.) Wurdack, comb. nov.

Miconia cinnamomea Beurl., Svensk Vet. Handl. 131. 1854.

Oxymeris cinnamomea (Beurl.) Triana, Trans. Linn. Soc. Bot. 28: 94. 1871.

Leandra cinnamomea (Beurl.) Cogn., Mart. Fl. Bras. 14(4): 77. 1886.

Conostegia micromeris Standl., Contr. Arn. Arb. 5: 117, pl. 15. 1933.

Conostegia haughtii Gleason, Phytologia 2: 429. 1948.

The holotype (S) and isotype (S) of Miconia cinnamomea (Billberg 271, "Porto-Bello, in montibus, April 1826") conform to recent collections of C. micromeris from Central America and northern Colombia; the holotype had been annotated by Triana, but not Cogniaux. Gleason had already noted (Phytologia 3: 359. 1950) the synonymy of C. haughtii. Beurling's name was overlooked in the melastome treatment for the Flora of Panama. Leandra consimilis Gleason, Miconia breneisii Standley, and Clidemia ombrophila Gleason vegetatively rather closely resemble C. cinnamomea.

MICONIA GLANDULISTYLA Wurdack, sp. nov.

Sect. Amblyarrhena. M. grandiflorae Cogn. affinis, petalis staminibusque minoribus calycis lobis oblatis tori intus cingulo non evoluto ovarii collo non evoluto differt.

Ramuli obtuse quadrangulati sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque pilis stellulato-pinoideis ca. 0.2 mm longis modice caduceque puberuli; linea interpetiolaris curvata paulo evoluta. Petioli 1.5-3(-4) cm longi et 4-6 mm crassi; lamina (13-)16-26(-29) X (6-8-10(-12) cm oblongo-elliptica apice hebeti-obtuso basi late acuta, subcoriacea et essentialiter integra, supra glabra, subtus in venis secundariis sparse pinoideo-puberula (0.1 mm) in superficie glabra, breviter (1-1.5 cm) 5(-7)-plinervata nervis secundariis plerumque 4-5 mm inter se distantibus nervulis subtus planis areolis ca. 1 mm latis. Panicula 17-22 cm longa (pedunculo 5-6 cm longo incluso) et submultiflora; flores 5-meri, pedicellis 5-8 mm longis, bracteolis 3-4 X 1-1.5 mm et ca. 2-2.5 mm infra hypanthium insertis ante anthesim deciduis. Hypanthium (ad torum)

4-5 mm longum obscure sparseque verruculosum intus paulo costulatum; torus intus sparsiuscule glandulosus cingulo non evoluto; calycis tubus 0.8-1 mm altus, lobis interioribus 1.3-1.5 X 4 mm oblatis caduce ciliolatis, dentibus exterioribus non eminentibus. Petala 10-11 X 10.5-11 mm suborbicularia dense pruinosa-granulosa. Filamenta 4.5-5 mm longa dense glandulosa; antherarum thecae 3.5-3.7 X 2 X 1.7-1.9 mm oblongae, poro 0.3-0.35 mm diam. dorsaliter inclinato; connectivum ventraliter ad basim paulo bilobulato-prolongatum glandulis prominentibus basim versus ornatum. Stigma expansum 2-2.5 mm diam.; stylus 7-7.6 X 1-2 mm dense glanduloso-puberulus; ovarium 5-loculare et fere omnino inferum (cono 0.1-0.3 mm alto) modice glandulosum collo non evoluto.

Type Collection: J. A. Steyermark 54268 (holotype F 1207905; isotype NY), collected in dense forest above Mirador, Prov. Morona-Santiago, Ecuador, elev. 2375 m, 9 Sep. 1943.

"Shrub 10 ft. tall; petals white, outside rose-orchid; stamens yellow; pistil creamy white; calyx dull brownish lavender; peduncle dull brown."

Paratypes (both Ecuador): Grubb, Lloyd, Pennington, & Whitmore 1124 (US), from ca. 9 km NE of Borja, Prov. Napo (?), elev. 1600 m. "Tree with open crown 7 m. Fruit dull white when mature"; Camp E-732 (NY, US), from Páramo del Castillo between Sevilla de Oro and Méndez, Prov. Morona-Santiago, elev. 2700-3300 m. "Shrub to 8 m. Corolla pale purplish; anthers yellow."

Miconia grandiflora has triangular calyx lobes 2-2.2 mm long, petals 15-20 mm long, a well-developed internal flange ca. 0.8 mm wide at the torus, relatively narrower anthers 4-4.5 X 1.2 X 1 mm, and a well-developed ovary collar ca. 1 mm long around the style base; an excellent modern match for Lehmann 3742 (isotype US) is von Sneider 1640 (US), from La Costa, Cauca, Colombia. Also closely related is M. macrantha Triana, with slender petioles 2.5-4.5 cm long, larger petals (17-18 X 14-15 mm) and anthers (4.3 X 1.4 X 1.2 mm), stigma 3.5 mm diam., and an ovary cone (including a collar 0.3 mm) ca. 1 mm long, but oblate calyx lobes 1.5 mm long and only a slight toral flange; a recent collection of this Antioquia rarity is Rivera, Llano, & Ruiz 726 (US), from El Chuscal on the Urrao-Caicedo road, elev. 2700 m.

MICONIA BELLA Wurdack, sp. nov.

Sect. Amblyarrhena. M. glandulistylae Wurdack affinis, foliorum laminis vix plinervatis, calycis lobis longioribus, antherarum thecis proportione angustis, stigmate ampliore, ovarii cono et glandulis coroniferis longioribus.

Ramuli robusti quadrangulati sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque pilis pinoideis 0.1-0.2 mm longis plus minusve persistentibus densiuscule puberuli; linea interpetiolaris obscure evoluta. Petioli 1.5-3 cm longi et ca. 2.5-3 mm crassi; lamina (8-)14-20 X (4-)9-12 cm oblongo-elliptica apice hebeti-obtusum vel rotundato basi obtusa, subrigida et integra, eciliata, ubique in superficie primum sparse pilis pinoideo-stellulatis ca. 0.1 mm latis longisque puberula

glabrata, 5-nervata vel breviter (ad 0.5 cm) pseudoplinervata nervis secundariis ca. 5 mm inter se distantibus nervulis subtus planis areolis ca. 1-1.5 mm latis. Panicula 17-30 cm longa (pedunculo 5-10 cm longo incluso) multiflora; flores 5-meri, pedicellis 4-8 mm longis robustis, bracteolis ca. 3 X 1-1.5 mm mox deciduis circum pedicellorum bases insertis. Hypanthium 5.5-6.3 mm longum intus paulo costulatum; calycis tubus 1-1.5 mm longus, lobis interioribus 2 X 3.5-4.5 mm oblatis ubique basin versus pilis vix asperis ca. 0.1 mm longis modice strigulosis, dentibus exterioribus crassis inframarginalibus; torus intus sparsiuscule glandulosus, cingulo non evoluto. Petala (7-)-8-9 X 9-10 mm suborbiculari-obovata dense granulosa. Stamina isomorpha; filamenta 4-5 mm longa dense glandulosa (0.1 mm); antherarum thecae 3.3-3.7 X 1.1-1.3 X 1.2-1.4 mm oblongae, poro 0.3-0.4 mm diam. dorsaliter inclinato; connectivum ad basin glandulosum dorsaliter non appendiculatum ventraliter 0.4-0.5 mm crassum cum thecis bilobulato-coalitum. Stigma expansum 3.2-3.5 mm diam.; stylus 8-9 X 1-1.8 mm dense glandulosus in ovarii collo ca. 0.3 mm immersus; ovarium 5-loculare et ca. 3/4 inferum, cono ca. 0.5-1 mm alto collo setulis glanduliferis 0.2-0.3 mm longis dense coronato.

Type Collection: H. García-Barriga 16122 (holotype US 2596508), collected on the Fusagasugá road between Aguacalara and La Aguadita, Depto. Cundinamarca, Colombia, elev. 2300 m, 6-8 Oct. 1958. "Arbol 15 m, erecto y bien ramificado; hojas verde claro por el haz, azulado por el envés; calíz, pedicelos y frutos ferrugíneos; corola blanca; estambres amarillos."

Paratypes (both Cundinamarca, Colombia); García-Barriga 17207 (US), from Villeta-Utica road, alt. 800-540 m, 15 Nov. 1959. "Arbol 4 m, muy ramificado. Pétalos blancos, rojo violáceos en la base; estilo blanco; anteras amarillas"; Uribe 3512 (US), from cleared areas on Fusagasugá road between San Miguel and La Aguadita, elev. ca. 2200 m. "Arbolito de 5 metros de altura. Hojas purpurascences en el envés. Flores con pétalos blancos y estambres amarillos. No es planta común."

Miconia glandulistyla has thicker petioles, definitely plinerved leaf blades, calyx lobes only 1.3-1.5 mm long, anther thecae 2 mm thick, stigma 2-2.5 mm diam., and ovary cone only 0.1-0.3 mm high crowned with glands only 0.05 mm long. Miconia grandiflora Cogn. has more formless pubescence, a well-developed toral flange within, larger corolla and anthers, and very short ovary cone hairs. Miconia majalis Cogn. has thinner sparser pubescence, denticulate leaf blades, shorter calyx lobes, and a longer (ca. 2.5 mm) ovary cone with glands only 0.05 mm long.

MICONIA CODONOSTIGMA Gleason & Wurdack, sp. nov.

Sect. Amblyarrhena. M. bellae Wurdack affinis, trichomatibus maioribus foliis subtus pilis stipitato-stellatis indutis floribus maioribus tori intus cingulo evoluto differt.

Ramuli robusti teretes, sicut petioli laminarum subtus venae primariae et secundariae inflorescentiae dense pilis pinoideis 0.2-0.3 mm longis plus minusve caducis dense puberuli; línea

interpetiolaris obscure evoluta. Petioli 2-4 cm longi; lamina 11-19.5 X 6-10.5 cm elliptica apice hebeti-acuto basi obtusa, rigida et integra, supra glabra, subtus in superficie modice pilis stipitato-stellatis (stipite 0.1-0.3 mm longo) ca. 0.3-0.4 mm diam. obsita, breviter (ca. 0.5 cm) 5-pseudoplinervata nervis secundariis plerumque 3-5 mm inter se distantibus nervulis subtus planis areolis 0.7-1 mm latis. Panicula ca. 20 cm longa submultiflora; flores 5-meri, pedicellis 5-10 mm longis robustis, bracteolis ante anthesim caducis non visis. Hypanthium (ad torum) 6.5-7 mm longum intus obscure costulatum extus modice pilis stellulato-pinoideis ca. 0.1 mm longis indutum; calycis tubus 1.5 mm longus, lobis interioribus 4.5-5 X 6.5-7 mm subrotundatis, dentibus exterioribus crassis inframarginalibus; tori intus cingulum ca. 1 mm modice glanduloso-ciliolatum (0.1 mm) evolutum. Petala 18-20 X 13-15 mm oblongo-obovata dense pruinoso-granulosa. Stamina essentialiter isomorphica; filamenta 7.5-7.6 mm longa sparsiuscule glandulosa (0.05-0.1 mm); antherarum thecae 5.8-6.1 X 1.8-2 X 1.6-1.7 mm oblongae vix rostratae, poro 0.3-0.35 mm diam. dorsaliter inclinato; connectivum ad basim simplex dorsaliter glandulis sparse obsitum. Stigma infundibuliforme 4.5-5 mm diam.; stylus 1.5 X 1.7-2.5 mm densiuscule glanduloso-puberulus (0.1-0.3 mm) in ovarii cono ca. 0.4 mm immersus; ovarium 5-loculare et ca. 2/3 inferum, cono ca. 1.5 mm alto manifeste costulato modice glanduloso-puberulo (0.1-0.2 mm).

Type Collection: J. Cuatrecasas 22468 (holotype NY; isotype US), collected above Alto de Mira (between Tabor and Carrizales), Cordillera Occidental, Depto. El Valle, Colombia, elev. 2100-2350 m, 23 Oct. 1946. "Arbol 12 m, tallo 20 cm diam.; corteza gris o gris-ocráceo claro, sección blanca que se torna rosada. Madera dura rosada con centro grisáceo. Hoja coriácea verde oscura brillante haz, verde ocrácea o ferruginosa verdosamente enyes. Pétalos blancos o blanco rosados. Anteras amarillas claras. Estigma en forma de embudo blanco."

Miconia bella has smaller trichomes, sepals, petals, and stamens, and lacks a toral corona. Miconia grandiflora Cogn. has arachnoid-pinoide pubescence and smaller sepals, stamens, and stigma, as well as densely glandular-puberulent filaments. H. A. Gleason had done dissections and made preliminary notes on the general affinities of M. codonostigma, as well as suggesting the epithet here used.

MICONIA HADROPHYLLA Wurdack, sp. nov.

Sect. Amblyarrhena. M. grandiflorae Cogn. affinis, floribus paulo minoribus, tori cingulo vix evoluta, antherarum maiorum connectivis dorsaliter ad basim dente hebeti armatis differt.

Ramuli obtuse sulcato-quadrangulati sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque indumento arachnoideo-pinoideo appresso deciduo plus minusve denso obsiti; linea interpetiolaris non evoluta. Petioli 3-6 cm longi, 2.5-3 mm crassi; lamina 15-29 X 11-16 cm, oblongo-ovata apice breviter (ca. 1 cm) subabrupteque hebeti-acuminato basi 0.4-1 cm cordata,

firme membranacea et subtiliter calloso-denticulata, supra glabra, subtus in venis secundariis sparsiuscule caduceque arachnoideo-squamosa in superficie glabra, 7-nervata nervis secundariis plerumque 5-7 mm inter se distantibus nervulis subtus planis areolis ca. 1-1.5 mm latis. Panicula 15-24 cm longa multiflora; flores 5-meri, pedicellis 2-3 mm longis crassis, bracteolis 2.5-3.3 X 1.2 mm usque ad anthesim persistentibus. Hypanthium (ad torum) 4-5 mm longum intus paulo costulatum; tori intus cingulum paullulo evolutum ca. 0.1-0.2 mm latum modice glandulosum; calycis tubus 0.7-1 mm longus, lobis interioribus 1.2-1.6 X 3 mm oblatis caduce ciliolatis, dentibus exterioribus crassis lobos interiores aequantibus. Petala 8-11(-14) X 8-10 (-12) mm obovato-suborbicularia dense pruinoso-granulosa. Stamina paullulo dimorphica; filamenta 4-6 mm longa dense glandulosa; antherarum thecae 3.2-4 X 1.4-1.6 X 1.1-1.2 mm oblongae poro 0.2 mm diam. dorsaliter inclinato; connectivum ad basim sparse glandulosum ventraliter 0.2-0.4 mm crassum ad thecas coalitum dorsaliter dente hebeti descendenti 0.6-0.7 X 0.9-1 mm vel 0.1-0.3 X 0.5-0.6 mm armatum. Stigma expansum 1.4-1.6 mm diam.; stylus 8-11 X 0.6-1 mm dense glandulosus in ovarii cono 0.2 mm immersus; ovarium 5-loculare et 2/3 inferum cono costato 1-1.2 mm alto sparsiuscule glanduloso.

Type Collection: H. García-Barriga, J. G. Hawkes, & M. Villareal 12946 (holotype US 1987014), collected on the western slope of Río Munchique, Cordillera Occidental, Depto. Cauca, Colombia, elev. 2400 m, 23 July 1948. "Arbol 4 m; corola rosada."

Paratypes (all Cauca, Colombia): Lehmann 5475 (K), from dense forest on upper western slopes of Andes of Popayan, elev. 2000-2500 m. "Tree or shrub 5-7 m. Flowers in June, white, turning lilac"; Killip 7969 (US), from La Galera, Micay valley, elev. 2000-2200 m. "Tree. Petals red"; von Sneider 753 (US), from La Costa near El Tambo, elev. 1000 m; Flowerman & Vaughan 5313 (US), from between El Tambo and 20 de Julio, elev. 2100-2300 m. "Tree 4 m with spreading branches, on steep slopes in cloud forest. Petals white, turning pink."

Miconia grandiflora has entire 5-nerved leaf blades merely obtuse at the base, ca. 1/4 larger flowers, a distinct flange ca. 0.8 mm wide at the torus within, relatively somewhat narrower anthers without a dorsal connective tooth, stigma ca. 3.5 mm diam., and ovary collar 1 mm long around the style base. More distantly related are M. majalis Cogn., M. floribunda (Bonpl.) DC., and the two Ecuadorian species here described. Miconia macrantha Triana has shortly plinerved (but denticulate) leaf blades broadly acute to obtuse at the base, larger flowers (petals 17-18 X 14-15 mm; stigma 3.5 mm diam.), and longer relatively narrower anthers without a dorsal connective tooth. The collections of M. hadrophylla had all previously been identified as M. grandiflora or M. majalis.

MICONIA PROMINENS Wurdack, sp. nov.

Sect. Amblyarrhena. M. majali Cogn. affinis, foliorum

laminis ad basim rotundatis supra ad basim tuberculo armatis, hypanthio sicut stigmatе ovarii cono minore differt.

Ramuli obtuse sulcato-quadrangulati sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque sparsiuscule caduceque pilis clavatis obscure asperis ca. 0.1 mm longis armati; linea interpetiolaris arcuata evoluta. Petioli 3-4.5 cm longi; lamina 19-23 X 11-12 cm elliptica apice hebeti-acuto basi rotundato-obtusa et supra tuberculo 2-3 X 1.5 mm armata, firme membranacea et integra, eciliata, supra glabra, subtus in venis secundariis sparse pilis clavatis minutis puberula in superficie glabra, 5-nervata nervis secundariis ca. 5 mm inter se distantibus nervulis subtus planis areolis ca. 0.7 mm latis. Panicula 23-26 cm longa (pedunculo 7 cm longo incluso) submultiflora; flores 5-meri, pedicellis 4-6 mm longis, bracteolis 2.5-3 X 0.7-1 mm ca. 1-2 mm infra hypanthium insertis ante anthesim deciduis. Hypanthium (ad torum) 4 mm longum extus sparse verruculosum intus paulo (0.1 mm) costulatum; calycis tubus 1 mm longus, lobis interioribus 1-1.5 X 4 mm oblatis caduce ciliolatis, dentibus exterioribus non eminentibus; toris intus cingulum ca. 0.3 mm latum modice glanduloso-ciliolatum armatum. Petala 9.5-11 X 11-12 mm suborbicularia dense pruinoso-granulosa. Filamenta 4.5-5 mm longa dense glandulosa (0.1 mm); antherarum thecae 4.3 X 1.8-2 X 1.6-1.7 mm oblongae, poro 0.4 mm diam. dorsaliter inclinato; connectivum ventraliter ad basim paulo bilobulato-prolongatum glandulis prominentibus basim versus ornatum. Stigma expansum 3 mm diam.; stylus 8.5 X 1.5-2 mm dense glanduloso-puberulus in ovarii collo 0.6 mm immersus; ovarium 5-loculare et 2/3 inferum, cono (collo incluso) ca. 1 mm alto ad apicem modice stellulato-puberulo et sparse glanduloso.

Type Collection: W. H. Camp E-791 (holotype NY; isotype US), collected between Hda. Chontal and Sta. Elena on trail between Sevilla de Oro and Méndez, Prov. Morona-Santiago, Ecuador, elev. 1000-1400 m, 1 Nov. 1944. "Tree 6 m. Corolla white to pale lavender; filaments red; anthers yellow."

Miconia majalis has the leaf blades narrowly decurrent for ca. 2 cm on the petioles and without a basal tubercle, hypanthia (dry) ca. 6 mm long (rather than 4 mm), stigma (dry) ca. 3 mm diam. (rather than 2 mm), and ovary cone (including a collar 1-1.5 mm long) ca. 2 mm long (rather than 1 mm). Both species have the leaf veins and venules beneath with clavate (and very obscurely roughened) hairs ca. 0.1 mm long, thus differing from M. glandulistyla Wurdack and its allies (with definitely pinoid hairs). Miconia glandulistyla also differs in the usually shorter and more robust petioles, definitely plinerved and relatively narrower leaf blades, somewhat smaller anthers and stigma, and ovary apex without a collar.

MICONIA SODIROI Wurdack, sp. nov.

Sect. Amblyarrhena. M. neurotrichae Cogn. distanter affinis, ramis alato-quadrangulatis foliis maioribus floribus paulo maioribus differt.

Ramuli alato-tetragoni (alis 1-2 mm altis in nodis arcuate

coalitis) sicut folia novella inflorescentia hypanthiaque pube arachnoidea mox decidua induti. Petioli 2-4 cm longi sicut laminarum subtus venae primariae modice setulosi pilis laevibus 0.2-0.4 mm longis; lamina 20-35 X 7-14 cm oblongo-elliptica apice breviter (ca. 1 cm) gradatimque hebeti-acuminato basi late obtusa, firme membranacea et obscure crenulata, distanter caduce-que appresso-ciliolata, supra ad maturitatem glabra, subtus in venis secundariis tertiariisque sparse setulosa (pilis gracilibus laevibus usque ad 0.6 mm longis) in superficie glabra, 5-nervata vel paulo (usque ad 0.5 cm) pseudoplinervata nervis secundariis ca. 3-5 mm inter se distantibus nervulis subtus laxe reticulatis areolis 1-2 mm latis. Panicula 13-27 cm longa sub-multiflora, axe sicut ramis argute quadrangulato; flores 5-meri, pedicellis ca. 5 mm longis ad hypanthii basim articulatis, bracteolis caducis non visis. Hypanthium (ad torum) 3.9 mm longum intus ecostatum; calycis tubus 0.4 mm longus, lobis interioribus 0.5 mm longis oblatis minutissime ciliolatis, dentibus exterioribus lobos interiores aequantibus; torus intus glaber. Petala 6-6.5 X 3.5-4 mm obovato-oblonga dense pruinoso-granulosa. Filamenta 3-3.2 mm longa glabra; antherarum thecae 3.8-4 X 0.8 X 0.7 mm oblongae, poro 0.2 mm diam. dorsaliter inclinato, connectivo glabro non appendiculato. Stigma non expansum 0.3 mm diam.; stylus 10 X 0.4-0.5 mm dense pilis flexuosis caduce glanduliferis 0.1-0.2 mm longis indutus in ovarii apicem 0.1-0.3 mm immersus; ovarium 5-loculare et 1/3 inferum, apice conico ca. 1.5-1.8 mm alto hebeti-costato glabro.

Type Collection: A. Sodiro Add. 2 (holotype BR; isotype P), collected "in silv. subtrop. vall. Nanegal," Prov. Pichincha, Ecuador, July 1902.

The isotype (or syntype ?; Triana lumped his collections 6258.60 from "Pasto", elev. 1800 m, and 6258.61 from "Popayan," elev. 2300 m, under No. 4020) of M. neurotricha (US) shows rotund-quadrangular branchlets without an interpetiolar flap, leaf blades only up to 15 X 5 cm, petals 5 X 3-3.2 mm, anther thecae 3.5 mm long, and filaments sparsely but definitely glandular-puberulous. The only Ecuadorian species of Miconia Sect. Amblyarrhena which at all resembles M. sodiroi in floral features, M. poortmannii (Cogn.) Wurdack, differs in some floral details and greatly vegetatively. The several Peruvian species with 4-alate branchlets do not closely resemble M. sodiroi in floral morphology.

MICONIA ASPERRIMA Triana

Miconia pennellii Gleason, Bull. Torrey Club 52: 448. 1925.

The only difference between the types is a disparity in flower size (M. asperima, Triana 4092, BM: hypanthium 4 mm long; calyx lobes 2 mm long; petals 4-4.2 X 3-3.2 mm; anthers 2.1-2.4 mm long; stigma 1.4 mm diam. M. pennellii, Killip 7951, US: hypanthium 2.7 mm long; calyx lobes 1.3-1.5 mm long; petals 2.7-2.9 X 2.5-2.9 mm; anthers 1.6-1.7 mm long; stigma 1 mm diam.). A somewhat distinctive node from typical M. asperima has sparser vegetative pubescence, but approximately the floral

dimensions of the Triana type; this facies ranges from the Eastern Cordillera in southern Colombia (Huila: Fosberg 19970. Huila-Cauca boundary: Fosberg 19943. Huila-Caqueta boundary: Cuatrecasas 8421 and 8794A. Caqueta: Mason 13946) to Ecuador (Morona-Santiago: Steyermark 54500 and 54610). The extreme in vegetative pubescence attenuation (but with petals 3.2-4 mm long and anthers 2-2.2 mm long), the leaves above almost glabrous and beneath with very minute hairs restricted to the principal veins, has been collected in the Cordillera Condor, Morona-Santiago, Ecuador (MacBryde 959). Another Ecuadorian deviant, with floral dimensions generally as in Killip 7951 but the leaves above very shortly and evenly bullulate-setulose and beneath very sparsely setulose and the hypanthia very sparsely strigulose, is known from the Cordillera Cutucú, Morona-Santiago (Madison, Bush, & Davis 3535 and 3550). A final Ecuadorian variant, florally like the Cutucu population but with leaf pubescence above much finer and somewhat dimorphic in size and more densely strigulose hypanthia, is restricted to the Eastern Cordillera in Morona-Santiago (Sparre 18726; Steyermark 53533 and 53558). Generally like this last Ecuadorian population, but with leaves beneath moderately setulose, is material from the Cordillera Occidental, Valle, Colombia (Lopez-Figueiras 8383). Probably also to be associated in this complex (the material fruiting or in young bud only), with the fine-strigulose upper leaf surfaces of the two just-mentioned nodes but with retrorse-setulose branchlets, petioles, and hypanthia, is still another Morona-Santiago population from near El Pan (Acosta-Solis 5022, 5023, 5051). Except for the ultimately-noted collections, the M. asperima complex can be characterized by the appressed smooth vegetative and hypanthial hairs, the relatively long calyx tube (0.8-1 mm), and the glandular-puberulous filaments and style. While M. scabra Cogn. was associated in the melastome monograph with M. asperima, the Chimborazo species seems better placed near M. obscura (Bonpl.) Naud.

MICONIA CAESARIATA Wurdack, sp. nov.

Sect. Amblyarrhena. M. lasiocalyce Cogn. affinis, ramulorum trichomatibus longioribus floribus maioribus differt.

Ramuli primum obscure quadrangulati demum teretes sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque pilis ca. (1.5-)2 mm longis laevibus gracilibus dense setosi. Petioli 2-4(-6) cm longi; lamina 7-14 X 3.5-5.5(-9) cm ovato-elliptica apice gradatim hebeti-acuminato basi late acuta vel obtusa, firme membranacea et minute ciliolato-serrulata, supra sparsiuscule setosa pilis gracilibus 1-1.5 mm longis ad basim paulo expansis, subtus sparsiuscule vel modice setosa pilis laxis gracillimis 1-1.5 mm longis, breviter (usque ad 1.5 cm) 5-plinervata nervis secundariis plerumque 3-4 mm inter se distantibus nervulis subtus planis areolis ca. 0.3-0.5 mm latis. Panicula 7-9 cm longa submultiflora; flores 5-meri plerumque obscure (ca. 1 mm) pedicellati, bracteolis 2-3 X 1-2 mm navicularibus ante anthesim deciduis. Hypanthium (ad torum) 3.6-4 mm

longum; calycis tubus 0.5 mm longus, lobis interioribus 1.3-1.7 X 2-2.2 mm, dentibus exterioribus inframarginalibus. Petala 3.6-4 X 3.6-4 mm obovato-suborbicularia obscure granulosa. Filamenta 4-4.3 mm longa modice glanduloso-puberula; antherarum thecae 2.8-3 X 1.1-1.2 X 1 mm oblongae, poro 0.15-0.25 mm diam. paulo dorsaliter inclinato. Stigma expansum 1.3-1.5 mm diam.; stylus 5 X 0.7-1 mm densiuscule glanduloso-puberulus; ovarium (4-)5-loculare et 3/4 inferum, colli apice modice setuloso (0.3-0.7 mm).

Type Collection: J. A. Steyermark 53573 (holotype FL207906; isotypes NY, US), collected in moist forest along Río Tintas at Arenillas 10 leagues southeast of El Pan, Prov. Morona-Santiago, Ecuador, elev. 2195 m, 13 July 1943. "Shrub 5-8 ft. tall; hairs on petioles and peduncles deep rose; calyx buff-cream color with rose-red; petals white; anthers brick red; filaments pale pink-brick."

Paratypes (both Morona-Santiago, Ecuador): Acosta-Solís 7446 (F), from between La Esperanza and Santa Ana, Huamboya, elev. 1500-2000 m. "Pequeño árbol de ramas bellas cafés"; Harling & Andersson 12702 (GB, US), from 16-18 km from Limón on Limón (General Plaza)-Gualaceo road, elev. 1900-2000 m. "Shrub ca. 2 m. Corolla white."

Miconia lasiocalyx has cauline pubescence only ca. 0.5 mm long, hypanthia 2.6-3 mm long, petals 2-2.5 mm long and wide, and anther thecae mostly 2-2.2 X 0.6 mm. Miconia ruizii Naud. has smaller flowers with less expanded stigmas.

MICONIA AGGREGATA Gleason subsp. AUSTRALIS Wurdack, subsp. nov.

Foliorum laminis subcoriaceis ellipticis vel paulo ovato-ellipticis apice hebeti-acuto supra pilis 1.5-2 mm longis strigosius bullis non vel obscure evolutis differt.

Type Collection: J. J. Wurdack 1629 (holotype US 2404326; isotype USM; 5 additional isotypes to be distributed), collected in moist scrub forest on south side of Molinopampa-Diosan pass, Prov. Chachapoyas, Depto. Amazonas, Peru, elev. 2700-3100 m, 8 Aug. 1962. "Shrub 2-4 m, occasional. Flowers white."

Paratypes (both Prov. Azuay, Ecuador, along construction road Sigsig-Gualaquiza): Harling, Storm, & Ström 8243 (GB, US), from 1 km below Molón, elev. 2800-3000 m; Harling, Storm, & Ström 8286 (GB), from Río Altarurcu ca. 20 km east of Sigsig, elev. 2800 m.

As now interpreted, the typical subspecies of M. aggregata has firm-membranaceous leaf blades which are ovate and gradually long-acuminate and with the slender upper surface hairs ca. 1 mm long and on distinct bullae; the range includes Antioquia, Cundinamarca, and Huila in Colombia (Cauca material-Espinal 3203, Haught 5247, von Sneider 444 and 2433- currently referred here being distinct) and Napo in Ecuador. The ovary apex in the type collection of M. aggregata is caducously setulose, rather than glabrous as originally described. Certainly M. ruizii Naud. is very closely related to M. aggregata, differing in the longer calyx lobes (1-1.1 mm), slightly dorsal anther pore, and less

expanded stigma (ca. 0.7 mm diam.). The only recent materials of M. ruizii which seem comparable to the holotype (P) are Buchtien 5504 (US) and 5505 (US), from Hacienda Simaco above the trail to Tipuani, Bolivia, elev. 1400 m. Miconia inamoena Pilger is also only a minor permutation from M. aggregata and M. ruizii, differing from the former in leaf shape, from the latter in the sparser upper leaf surface pubescence and shorter calyx lobes, and from both in the moderately glandular-puberulous stamen filaments.

MICONIA CALIGNOSA Wurdack, sp. nov.

Sect. Amblyarrhena. M. polytopicae Wurdack affinis, foliorum supra trichomatibus crassioribus stigma plus expanso ovario 5-loculari differt.

Ramuli primum obscure rotundato-quadrangulati mox teretes sicut petioli laminarum subtus venae primariae inflorescentia hypanthiaque dense strigosi pilis laevibus ca. 1-1.5 mm longis. Petioli 0.6-1 cm longi; lamina 4-9 X 2-4.5 cm anguste ovata apice hebeti-acuto basi late obtusa, rigida et obscure serrulata, robuste incurvo-ciliata, supra modice strigulosa pilis robustis 0.2-1.3 mm longis ad basim paullo expansis, subtus dense appresso-setulosa, obscure (usque ad 0.4 cm) 5-plinervata nervis secundariis ca. 2 mm inter se distantibus nervulis subtus planis areolis ca. 0.3 mm latis. Panicula 5-6 cm longa submultiflora; flores 5-meri sessiles, bracteolis ca. 1.3 X 0.3 mm persistentibus; hypanthium 2 mm longum; calycis tubus 0.2 mm longus, lobis interioribus 1 mm longis rotundatis, dentibus exterioribus inframarginalibus. Petala 1.7 X 1.2 mm oblongo-ovata obscure granulosa. Filamenta modice glanduloso-puberula; antherarum thecae 2 X 0.6 X 0.5 mm oblongae, poro 0.15 mm diam. paulo dorsaliter inclinato. Stigma expansum 0.75 mm diam.; stylus 4.5 X 0.35-0.4 mm modice eglanduloso-puberulus in ovarii apicem 0.2 mm immersus; ovarium 5-loculare et 2/3 inferum, cono modice setuloso (0.3 mm).

Type Collection: Benkt Sparre 18730 (holotype S), collected in cloud forest at Km 39-41 of Cuenca-General Plaza (Limón) road, Prov. Morona-Santiago, Ecuador, elev. ca. 2300 m, 19 Sep. 1967.

Paratype: Sparre 18752 (S), from subpáramo at Km 25 of Cuenca-General Plaza road east of pass to Azuay, Prov. Morona-Santiago, Ecuador, elev. ca. 3200 m, 19 Sep. 1967.

The general aspect of M. calignosa is very similar to that of M. polytopica subsp. huanucensis Wurdack; however, all the subspecies of M. polytopica have fine upper leaf surface hairs (ca. 0.07-0.1 mm diam.), less expanded stigmas (ca. 0.4-0.5 mm dry), anthers 1.5-1.6 mm long (dry), and 3-4-celled ovaries. Miconia pailasana Wurdack, the closest Ecuadorian relative of M. calignosa, has much finer pubescence on the upper leaf surfaces and much sparser and shorter hairs on the lower surfaces, smaller anthers (ca. 1.5 mm long dry) and stigma (0.5 mm diam. dry), and a 3(-4)-celled ovary. Miconia capitellata Cogn. differs in the divaricate and somewhat retrorse cauline pubescence, larger leaves and flowers, and ventrally inclined

anther pore. The floral dimensions given in the description of M. calignosa are from a dry flower.

MICONIA AEQUATORIALIS Wurdack, sp. nov.

Sect. Amblyarrhena. M. bipatriali Wurdack affinis, bracteolis hypanthiis calycis lobis stigmatique minoribus antherarum filamentis glabris differt.

Ramuli primum obscure rotundato-quadrangulati mox teretes sicut petioli inflorescentia hypanthiaque modice pilis laevibus laxis 0.5-1 mm longis setulosi et sicut petioli laminarum subtus venae primariae modice (inflorescentia hypanthiaque sparse) pilis pinoides ca. 0.1 mm longis puberuli. Petioli 1-2 cm longi; lamina (5)-7-13 X (2)-3-5 cm oblongo-elliptica apice gradatim hebeti-acuminato basi late acuta vel anguste obtusa, subrigida et essentialiter integra, incurvo-ciliolata, supra aspero-bullulata et modice setulosa (pilis ca. 0.3 mm longis), subtus modice vel sparsiuscule setulosa pilis laevibus ca. 0.3-0.5 mm longis, 5-nervata (pari tenui marginali neglecto) nervis secundariis 1.5-2 mm inter se distantibus nervulis subtus planis areolis ca. 0.3 mm latis. Panícula 5-7 cm longa submultiflora; flores 5-meri, pedicellis obscuris 0.3-0.5 mm longis, bracteolis ca. 0.5 mm longis persistentibus. Hypanthium (ad torum) 2 mm longum; calycis tubus 0.1 mm longus, lobis interioribus 0.5 mm longis ovato-oblongis hebetibus, dentibus exterioribus minutis infra-marginalibus. Petala subrosea (?), 1.6-1.8 X 1.3-1.6 mm oblongo-ovata obscure granulosa. Stamina isomorphica glabra; filamenta 1.6-1.7 mm longa; antherarum thecae 1.7-1.8 X 0.4 X 0.35 mm oblongae exappendiculatae, poro 0.1 mm diam. ventraliter inclinato. Stigma expansum 0.7 mm diam.; stylus 4 X 0.4-0.5 mm sparse puberulus in ovarii cono 0.1-0.2 mm immersus; ovarium 5-loculare et ca. 2/3 inferum coni apice 0.1-0.2 mm setuloso.

Type Collection: Benkt Sparre 18736 (holotype S), from cloud forest at Km 39-41 of Cuenca-General Plaza (Limón) road, Prov. Morona-Santiago, Ecuador, elev. ca. 2300 m, 19 Sep 1967.

Paratype: Little, Ortega, Samaniego, & Vivar 677 (US), near-topotypical, elev. 2100 m, 12 Oct. 1975. "Arbol de 12 m, 15 cm diam. Bosque montano alto, lat. 2° 58' S, 78° 36' W."

The suggested relative has greater development of underlying pinoid hairs, bracteoles 1-2 mm long, hypanthia 2.5-3.2 mm long, calyx lobes 1.6-1.8 mm long, filaments sparsely glandular-puberulous, stigma 1-1.3 mm wide, and style densely glandular-puberulous. Miconia aequatorialis resembles the Peruvian subspecies of M. bipatrialis in the pubescence of the upper leaf surfaces. Miconia clivorum Wurdack differs in the relatively broader leaf blades with longer setulae above, longer pedicels, and merely stellulate-furfuraceous ovary with a long stylar collar.

MICONIA NAMANDENSIS Wurdack, sp. nov.

Sect. Amblyarrhena. M. bipatriali Wurdack et M. aequatoriali Wurdack affinis, foliis minoribus differt.

Ramuli primum rotundato-quadrangulati demum teretes sicut

petioli laminarum subtus venae primariae inflorescentiaque sparse vel sparsissime pilis laevibus 0.3-0.5 mm longis setulosi et pilis pinoideis 0.1-0.3 mm longis dense puberuli. Petioli 0.7-1.2 cm longi; lamina 3-6 X 1.8-3.3 cm elliptico-ovata apice hebeti-acuto basi rotundato-obtusa, coriacea et obscure undulato-serrulata, crasse ciliolata, supra subbullata et sparsiuscule setulis 0.2-0.3 mm longis aspera, subtus modice setulosa pilis laevibus ca. 0.3-0.5 mm longis, 5-nervata venis secundariis ca. 1.5 mm inter se distantibus nervulis subtus planis areolis ca. 0.3 mm latis. Panicula 3-5 cm longa submultiflora; flores 5-meri, pedicellis plerumque 1-2 mm longis, bracteolis 0.5-0.7 X 0.2 mm subpersistentibus ca. 0.3 mm infra hypanthium insertis. Hypanthium (ad torum) 2 mm longum densiuscule pilis laevibus ca. 0.3 mm longis setulosum pilis pinoideis 0.1 mm longis sparsiuscule intermixtis; torus intus glaber; calycis tubus 0.1 mm longus, lobis interioribus ca. 1.7 X 1.5 mm subrotundatis, dentibus exterioribus inframarginalibus. Petala 2 X 1.8-2 mm obovato-suborbicularia obscure pruinoso-granulosa. Stamina isomorphica; filamenta 1.8-1.9 mm longa modice glanduloso-puberula; antherarum thecae 1.7 X 0.5 X 0.4 mm oblongae ex-appendiculatae, poro 0.1 mm diam. ventraliter inclinato. Stigma expansum 1 mm diam.; stylus 3 X 0.6 mm modice glanduloso-puberulus in ovarii collo 0.2 mm immersus; ovarium 5-loculare et ca. 2/3 inferum, collo setuloso 0.1-0.15 mm.

Type Collection: Reinaldo Espinosa E-1077 (holotype NY), from Namanda south of Loja, Prov. Loja, Ecuador, elev. 1500-1600 m, 24 Nov. 1946. "Arbusto copioso. Hojas ovales-agudas, las tiernas con tinta violeta. Florecitas blanquecinas."

Both suggested relatives have much larger leaves; M. bipatrialis has larger bracteoles, essentially sessile flowers, longer hypanthia, and somewhat larger anthers, while M. aequatorialis has less development of pinoid hairs, smaller calyx lobes, and glabrous filaments. Espinosa 1077 had been filed as M. crassifolia Triana; that north Peruvian species, however, is distantly related, having leaf blades esetulose above, larger flowers, external calyx teeth equalling or slightly exceeding the internal lobes, and the torus within densely fimbriate-setulose. A species perhaps related to M. namandensis is represented by Harling, Storm, & Ström 8133 (GB, fruiting only), from between Sigis and Gualaquiza, Morona-Santiago, differing however in the sparser stellulate pubescence, more developed simple inflorescence hairs, leaf blades nearly glabrous beneath, and (probably) larger flowers.

MICONIA ASPERGILLARIS (Bonpl.) Naud.

Miconia aspergillaris and its relatives in Sect. Amblyarrhena are a cloudy alliance, with surely much hybridization. The apparent holotype of var. gracilis Naud., best matched in recent collections at US by Rose, Pachano, & Rose 22871 (vicinity of Cuenca), is a Jameson collection without number sent to Paris by Hooker (and apparently not the same gathering as Jameson 258 from Pichincha); the presumed holotype was not

annotated with the varietal name by Naudin but agrees with the Naudin description and is the only specimen found at Paris that does conform in collection data and morphology. However, in the variational gamut seen in the numerous collections now ascribed to M. aspergillaris, the variety does not seem worthy of recognition. Miconia mutisella Gleason does not seem specifically distinct from M. aspergillaris, but infraspecific recognition as a reduced (in leaf and flower size) variant may be needed in the future. Also there are other morphologic pseudopods noticeable among recent Ecuadorian materials, but no formal taxonomic status seems possible at present; particularly distinct is a population from Pichincha (Asplund 17139; Jameson 258; Lehmann 6232; Sparre 15966, 16786, and 17028) and Bolívar (Sodiño 503) with leaves more acute than usual at the apex and less pubescent beneath, flowers somewhat larger than typical, and ovaries moderately glandular and caducously setulose at the apex. Generally M. aspergillaris can be separated from its relatives by the combination of small leaves (mostly 1.5-3 X 1-2 cm), short pedicels, and (usually) esetulose ovary. The salient features of the other South American relatives of M. aspergillaris are:

M. centrophora Naud.: Flowers essentially sessile (the obscure pedicels 0.3-0.5 mm); ovary setulose. No Ecuadorian material of the typical form has been seen.

M. denticulata Naud. (including M. centrophora Naud. var. subintegerrima Cogn.): Leaves rather weakly 5-nerved, not or only obscurely pustulate above, rather obscurely callose-denticulate, with costal pubescence beneath mostly less than 0.3 mm long; simple inflorescence branchlet setulae moderate to dense; pedicels 1.5-2.5 mm long; ovary 10-setulose. Poortmann 175 (P) from Chuquiribamba, Loja, cited by Cogniaux as M. centrophora, seems better placed in M. denticulata, agreeing in all superficial details (but with an esetulose ovary).

M. pseudocentrophora Cogn.: Leaves strongly 5-nerved, moderately pustulate above, prominently crenulate-denticulate, with pubescence beneath denser and along the primary veins ca. 0.5 mm long; simple inflorescence branchlet setulae sparse or lacking; pedicels ca. 1 mm long; ovary glabrous.

CLIDEMIA ACOSTAE Wurdack, sp. nov.

C. collinae Gleason, C. myrmecinae Gleason, et C. taurinae Gleason affinis, domatiis in laminis omnino immersis foliis supra pustulato-setosis differt.

Frutex ca. 1 m; ramuli sicut petioli dense setosi pilis reflexis 6-10 mm longis. Petioli 3-7 cm longi; lamina (11-)16-24 X (5.5-)8-12 cm oblongo-ovata apice gradatim acuminato basi rotundata vel paulo (usque ad 0.5 cm) cordata, membranacea et irregulariter undulato-serrulata, supra sparse persistenterque pustulato-setosa pilis gracilibus 5-10 mm longis pustulis 1-2 mm latis et ca. 1 mm altis, subtus modice setosa pilis gracilibus plerumque 1-2(-3) mm longis, 7-plinervata pari interiore ca. 1-2 cm supra basin divergenti nervulorum areolis subtus ca. 1 mm

latis; formicaria ca. 1-1.5 cm longa in laminarum basibus omnino immersa. Inflorescentiae in foliorum superiorum axillis pauciflorae setosae fructiferae ca. 1 cm longae, bracteolis ca. 1.5 mm longis persistentibus; flores 5-meri, pedicellis ca. 1.5 mm longis. Hypanthium (ad torum) 3.8 mm longum modice setosum, pilis 2.5-4 mm longis; calycis tubus ca. 0.7 mm longus, lobis interioribus ca. 0.7 mm longis ovatis rotundatis esetulosis, dentibus exterioribus subulatis setosis ca. 2-2.5 mm eminentibus. Petala in alabastris ca. 3 X 3 mm glabra apice rotundato. Stamina immatura glabra; thecae oblongo-subulatae 2.3 X 0.45 mm nec appendiculatae nec prolongatae, poro minuto dorsaliter inclinato. Stigma non expansum; stylus glaber in ovariis collo ca. 0.3 mm immersus; ovarium 5-loculare et ca. 1/2 inferum, cono sparse glanduloso.

Type Collection: M. Acosta Solís 12722 (holotype F 1544186), from between El Pajon and Cachaco, Prov. Imbabura, Ecuador, elev. 600 m, 2 June 1949. "Arbolito o arbusto. Frutos blanco-azulados o grises."

Paratypes (both Ecuador): T. B. Croat 38965 (MO), from Río Mira between Ibarra and Lita, Prov. Imbabura, elev. 750-775 m, 8 Sep. 1976 (fruiting); C. Dodson & A. Gentry 6598 (MO, SEL, US), from forest along Río Palenque after crossing Río Bimbe and Río Waija, Prov. Los Rios, elev. 170 m, 7 Oct. 1976.

The suggested relatives all have domatia at least partly free of the leaf blade, as well as the blades above plane. As to the types, C. collina has the foliar pubescence above deciduous and beneath restricted to the primary and secondary veins (the best Panamanian matches among recent collections being Nee & Gentry 8669 and perhaps Foster 2355), C. myrmecina has basally nerved leaf blades with rather short (ca. 2 mm) setae moderately on the upper surfaces and elongate formicaria occupying 2/3-3/4 of the petiole below the blade (recent collections being Duke 11235 and 11373 from Colombia, as well as Duke 10922 from Darien, Panama), and C. taurina has foliar pubescence and nervation as in C. myrmecina but scrotiform formicaria at the petiole apex (Gillis & Plowman 10103 perhaps representing a Costa Rican record for this species). Clidemia pubescens Gleason has the upper leaf surfaces caducously pustulate-setose and the formicaria mostly immersed in the leaf blades, but the leaves beneath sparsely setose only along the primary and secondary veins and inflorescences on peduncles 5-6 cm long; Gleason's description indicated 4-merous flowers but none have survived on the holotype (US) and paratype (US) and the only recent Costa Rican collections (with relatively broader leaf blades, Standley & Valerio 47154, Taylor & Taylor 11478, Maas 1175, Jiménez 1840) which may represent this species seem to have 5-merous flowers. Most of the Central American collections currently named as C. setosa (Triana) Gleason show 4-merous flowers, a pedunculate inflorescence, and formicaria (when developed) below the leaf blade; however some materials have 5-merous flowers. Among the Panamanian collections currently identified as related to C. collina and C. taurina are several distinct morphologic nodes,

the most notable being the Veraguas population with 7-11-plinerved leaves (Mori & Kallunki 3076 and 3954; Croat 25933 and 27464) and the Coclé one with gland-tipped inflorescence hairs (Croat 22922; Dwyer 8663 and 8856; Nee & Dwyer 9196).

OSSAEA SPARREI Wurdack, sp. nov.

In pubescentia pinoidea antherisque O. quinquenerviae (Mill.) Cogn. affinis, foliis sessilibus amplexicaulibus floribus grandioribus differt.

Ramuli teretes sicut foliorum subtus venae primariae inflorescentiae densiuscule pilis pinoideis ca. 0.1(-0.15) mm longis induti. Folia essentialiter sessilia (petiolis crassis 0.1-0.3 cm longis), elliptica apice hebeti-obtusos basi 0.5-0.8 cm cordata, firme membranacea et distanter undulato-serrulata, 13-18 cm longa, 7-11 cm lata, supra glabra, subtus in venis secundariis tertiariisque sparse caduceque pinoideo-furfuracea, 5(-7)-nervata vel paulo (usque ad 0.5 cm) pseudo-plinervata nervis secundariis ca. 5-8 mm inter se distantibus sicut tertiariis subtus paulo elevatis nervulis subtus planis obscuris areolis ca. 0.5-1 mm latis. Panicula ut videtur terminalis (demum lateralis ?) 19-21 cm longa (pedunculo 5-6 cm longo incluso) submultiflora, ramis primariis oppositis; flores 5-meri, pedicellis 3-4 mm longis et 0.4-0.5 mm diam., bracteolis ca. 1 X 0.3 mm subsistentibus ca. 1 mm infra hypanthii basin insertis. Hypanthium (ad torum) ca. 2.3 mm longum sparsiuscule caduceque stellulato-puberulum; calycis tubus 0.8 mm longus, lobis interioribus 0.2-0.3 mm altis rotundatis remotis, dentibus exterioribus minutis infirmamarginalibus; torus intus modice glandulosus (0.1 mm). Petala 5.1-7 X 2-2.1 mm oblongo-lanceata glabra. Filamenta 2.3-2.6 mm longa glabra; antherarum thecae 2.5-2.8 X 0.5-0.6 X 0.5 mm lanceatae, poro ca. 0.1 mm diam. dorsaliter inclinato; connectivum non vel paullulo (0.1-0.2 mm) prolongatum dorsaliter dente descendenti hebeti ca. 0.2 mm longo sparse glanduloso-ciliolato armatum. Stigma non expansum; stylus 6 X 0.4-0.15 mm glaber in ovarii collo 0.3 mm immersus; ovarium 5-loculare et 1/2-2/3 inferum cono apicem versus modice glanduloso.

Type Collection: B. Sparre 18460 (holotype S), collected at confluence between Río Pilatón and Río Toachi, Aloag-Santo Domingo road, Prov. Pichincha, Ecuador, elev. 850 m, 9 Sep. 1967.

Paratype: Jameson s. n. (W), "Republic of Ecuador."

Ossaea quinquenervia has ciliolate leaf blades long-decurrent at the base, barely (0.1 mm) undulate calyx limb, externally granulose-furfuraceous petals only 1.6-1.7 mm long, and a completely inferior ovary. Ossaea robusta (Triana) Cogn. has similar pinoid pubescence and 5-merous flowers, but obviously petiolate leaves which are acute to obtuse at the blade base, finer leaf venule areoles, smaller flowers, and ellipsoid anther thecae only 0.8-1.1 mm long; O. sessilifolia (Triana) Wurdack differs in leaf shape (Phytologia 26: 408. 1973) and much smaller 4-merous flowers with externally densely scurfy petals.

OSSAEA PALENQUENSIS Wurdack, sp. nov.

O. sparrei Wurdack affinis, foliis trinervatis pedicellis gracillimis floribus minoribus ovario fere omnino infero differt.

Ramuli teretes sicut foliorum subtus venae primariae inflorescentiaeque modice pilis pinoideis ca. 0.1 mm longis plus minusve deciduis induti. Folia essentialiter sessilia (petiolis 0.2-0.3 cm longis) oblongo-elliptica vel paullulo obovato-elliptica apice hebeti-acuto basi paulo (0.3-0.5 cm) cordata, firme membranacea et distanter (0.5-1 cm) undulato-serrulata, 16-23 cm longa, 8-11 cm lata, supra glabra, subtus in venis secundariis sparse minute caduceque pinoideo-puberula in superficie glabra, 3-nervata (pari exteriore inframarginali tenui neglecto) vel paullulo (usque ad 0.5 cm) plinervata nervis secundariis 5-10 mm inter se distantibus nervulis subtus planis obscuris areolis ca. 1 mm latis. Paniculae e foliorum axillis singulae ca. 16-18 cm longae (pedunculo 6-7 cm longo incluso) subpauciflorae; flores 5-meri, pedicellis 3-5 mm longis et ca. 0.2 mm diam., bracteolis ca. 0.5-0.7 X 0.1 mm linearibus deciduis ca. 0.5 mm infra hypanthium insertis. Hypanthium (ad torum) ca. 1.8-2 mm longum sparsiuscule stellulato-puberulum; calycis tubus 0.4-0.5 mm altus, lobis interioribus ca. 0.15-0.2 mm altis rotundatis, dentibus exterioribus minutis non eminentibus; torus intus modice glandulosus. Petala ca. 3.6-3.8 X 1.1 mm oblongo-lanceata glabra. Filamenta 1.6 mm longa glabra; antherarum thecae 1.9 X 0.25 mm subulatae, poro minuto dorsaliter inclinato; connectivum vix (0.1 mm) prolongatum dorsaliter ad basim dente ca. 0.2 mm longo glandulifero descendenti armatum. Stigma non expansum; stylus glaber; ovarium 5-loculare et ca. 0.9 inferum (cono vix 0.1 mm alto, collo ca. 0.1 mm alto) dense glanduloso-puberulum; fructus 10-costatus i. s.

Type Collection: C. H. Dodson & A. Gentry 6553 (holotype US 2728948; isotype MO), collected along Trail 1, Río Palenque Biological Station, Km. 56 Quevedo-Santo Domingo, Prov. Los Rios, Ecuador, elev. 150-220 m, 7 Oct. 1976. "Shrub to 3 m tall. Inflorescence partly cauliflorous, pendant in fruit; flowers white."

Paratype: Dodson 6650, topotypical.

Ossaea sparrei has definitely 5(-7)-nerved leaf blades, pedicels 0.4-0.5 mm diam., considerably larger flowers, and a well-developed ovary cone, but is vegetatively disturbingly similar. The inflorescences in *O. palenquensis* are definitely lateral, one per node.

OSSAEA INCERTA Wurdack, sp. nov.

O. robustae (Triana) Cogn. in pubescentia antherisque affinis, foliis sessilibus calycis dentibus exterioribus promi-nenter eminentibus ovarii apice setuloso differt.

Ramuli primum sulcato-quadrangulati demum teretes sicut foliorum subtus venae primariae inflorescentiaeque pilis pinoideis 0.05-0.1 mm longis modice vel densiuscule induti. Folia sessilia ovata apice hebeti-acuminato basi 0.5-0.7 cm cordata, membrana-cea et crenato-serrulata, plerumque 9-15 cm longa et 5-9 cm

lata, supra ad maturitatem glabra, subtus sparsiuscule resinoso-glandulosa venulis superficiei alioqui glabris, 5-nervata (pari exteriore tenui neglecto) nervis secundariis 3-5 mm inter se distantibus nervulis subtus planis areolis plerumque ca. 0.4-0.5 mm latis. Inflorescentiae e foliorum axillis oriundae 8-11 cm longae (pedunculo gracili 3-4 cm longo incluso) plerumque ad pedunculorum apicem trifurcatae pauciflorae; flores (4-)5-meri, pedicellis gracilibus 2-4 mm longis, bracteolis ca. 0.2-0.3 mm longis linearibus persistentibus ca. 0.5 mm infra hypanthium insertis. Hypanthium (ad torum) ca. 2.6 mm longum paulo costulatum sparse caduceque pinoideo-furfuraceum et dense resinoso-glandulosum; calycis tubus ca. 0.2 mm longus, lobis interioribus ca. 0.6 mm longis triangularibus dentibus exterioribus subulatis 0.4-0.5 mm eminentibus; torus intus glaber. Petala glabra immatura solum cognita. Filamenta ca. 1 mm longa; antherarum thecae ca. 0.9 X 0.3-0.4 mm oblongae 4-loculares; connectivum paulo (0.15-0.2 mm) prolongatum, dente dorsali acutiusculo descendenti ca. 0.5 mm longo sparse glanduloso-ciliolato. Stigma vix expansum; stylus in ovarii cono ca. 0.2 mm immersus; ovarium (4-)5-loculare et ca. 2/3 inferum, apice paulo resinoso et setulis ca. 10 glanduliferis 0.2-0.3 mm longis coronato; fructus i. s. costatus.

Type Collection: M. Acosta Solís 12274 (holotype F 1543289), collected at Lita, Prov. Imbabura, Ecuador, elev. 501 m, 25 April 1949. "Arbustiva. Flores blancas."

Ossaea robusta has obviously petiolate 5-plinerved leaf blades, callose external calyx teeth barely projecting, and ovary apex sparsely glandular but without setulae. Ossaea brenesii Standley (synonym: Leandra lepidota Gleason) has similar vegetative pubescence and anthers but petiolate 5-plinerved leaves, corolla externally densely pinoid-furfuraceous, and ovary esetulose; a Colombian record for this otherwise Central American species is Hilty M-129 (US), from Alto Yunda, Río Anchicaya, Valle, elev. 1000 m. While having qualitatively the same vegetative pubescence as O. sparrei and O. palenquensis (vide supra), O. incerta has quite different anthers. Only moderately mature flower buds and fruit are available on the holotype of O. incerta, with ovate immature petals; however the anther and ovary features seem to negate any likely affinities in Clidemia.

TOPOBEA VERRUCOSA Wurdack, sp. nov.

A congeneribus foliis supra verrucis conicis armatis differt.

Ramuli primum obscure rotundato-quadrati mox teretes sicut petioli pedicelli florum bracteeae exteriores centraliter extus pilis recurvis robustis usque ad ca. 1 X 0.2 mm laevibus vel obscure asperis armati. Petioli 1-2.5 cm longi; lamina 6-12 (-14) X (3-)4-7.5 cm elliptica vel ovato-elliptica apice late obtuso vel rotundato basi rotundato-truncata vel paulo (usque ad 0.3 cm) cordata, rigida et integra, distanter (ca. 0.3-0.4 cm) calloso-ciliolata, supra verrucis conicis plerumque ca.

0.5-0.7 X 1-1.5 mm dense armata, subtus paulo foveolata et in venis venulisque densiuscule pilis 0.5-1 mm longis subclavatis conspicue barbellatis setulosa, 5(-7)-nervata nervis secundariis plerumque 0.3-0.4 cm inter se distantibus nervulorum areolis ca. 1.5-2 mm latis. Flores 6-meri in foliorum superiorum axillis oppositis plerumque 2-4(-5), pedicellis plerumque ca. 5 mm longis, bracteis late orbicularibus usque ad basim liberis intus glabris graciliter 0.5-0.7 mm ciliolatis; bractee exteriores 5-5.5 X 7.5 mm; bractee interiores 6 X 7.5-8 mm extus apicem versus centraliter modice retrorso-setulosae. Hypanthium (ad torum) 5 mm longum sicut calyx glabrum; calycis tubus 2 mm longus, lobis 2.5-3 X 3 mm rotundatis densiuscule ciliolatis 0.5-1 mm imbricatis; torus intus dense glanduloso-setosus, pilis gracilibus 1-2 mm longis. Petala ovata unguiculata minute retrorso-ciliolata alioqui glabra immatura ca. 7 X 5.5 mm. Stamina glabra; antherae paulo immaturae 5.7 X 1 X 1 mm anguste oblongae dorsaliter biporosae; connectivum dorsaliter ad basim per ca. 0.5 mm elevatum, calcari hebeti descendenti ca. 0.3 mm longo. Stigma punctiforme; stylus ca. 9 X 0.7 mm in ovarii collo ca. 0.9 mm immersus basim versus modice laxeque strigosus pilis glanduliferis ca. 0.5 mm longis; ovarium 6-loculare et ca. 1/4 inferum, lobis apicalibus hebetibus ca. 0.3 mm longis sparsissime minuteque glanduloso-setulosus.

Type Collection: M. T. Madison, E. O. Bush III, & E. W. Davis 3566 (holotype US), collected in elfin forest on western slopes of Cordillera Cutucú between Logroño and Yaupi, 2° 46' S, 78° 06' W, Prov. Morona-Santiago, Ecuador, elev. 2000 m, Nov. 1976. "Tree 3 m with rufous indument. Corolla pink."

All other species of Topobea have the leaf blades plane above. Of the species known to me with the torus densely fine-setose within, T. asplundii Wurdack, T. cutucuensis Wurdack, and T. setosa Triana all have much larger flowers with different internal floral details, while T. induta Markgraf (ex char.) has larger 5-plinerved leaves, ovate-acuminate bracts, and a glabrous style.

TOPOBEA DODSONORUM Wurdack, sp. nov.

In systemate Cogniauxii a speciebus 22-24 foliis maioribus differt.

Ramuli teretes primum sicut folia pedicelli bracteeque sparse subamorpho-stellulato-puberuli (pilis vix 0.1 mm diam.) mox glabrati; linea interpetiolaris elevata distincte evoluta. Folia in quoque pari dimorphica subcoriacea integra vel obscure distanterque crenulata late elliptica apice abrupte breviterque hebeti-acuminato basi rotundata 5-nervata nervis secundariis ca. 1.5 mm inter se distantibus. Folia maiora: petioli 1-2 cm longi; lamina (acumine ca. 1.5 cm longo excluso) 11-17 X 8-12 cm subtus ad basim domatiis binis 3-4 X 2-3 mm plerumque ornata. Folia minora: petioli 0.1-0.3 cm longi; lamina (acumine ca. 0.3-0.5 cm longo excluso) 1.5-3 X 1-3 cm domatiis non evolutis. Flores 6-meri plerumque 4(-8) in quoque nodo, pedicellis 20-25 mm longis; bractee exteriores 2.5 X 3.5 mm ovatae acutae ad

basim paulo (0.3 mm) coalitae; bracteae interiores 1.5 X 2.5 mm oblatae ca. 1 mm coalitae. Hypanthium (ad torum) 4 mm longum glabrum; calycis tubus 1.8 mm longus, lobis 1.7 X 2 mm triangularibus paulo furfuraceis extus carinatis. Petala 8 X 4-4.2 mm glabra obovato-oblonga apice hebeti-acuto. Filamenta 3.5 mm longa glabra; antherarum thecae 2.5-2.6 X 0.6 X 0.4 mm lanceatae non cohaerentes, poro dorsali 0.2 mm diam.; connectivum ad basim paullulo (0.3-0.4 mm) prolongatum dente hebeti-acuto dorsali descendenti 0.4 X 0.1 mm armatum. Stigma non expansum 0.2 mm diam.; stylus 3 X 0.7-0.2 mm glaber in ovarii collo 0.3 mm immersus; ovarium 4-loculare et 1/2 inferum apice cylindraceo 3 mm longo glabro.

Type Collection: C. H. & H. C. Dodson 6752 (holotype US 2781998; isotype SEL), collected in cloud forest along ridge line near La Centinella at Km 12 on road from Patricia Pilar to Flor de Mayo, Montaña de Ila, Prov. Pichincha-Los Rios border, Ecuador, elev. 600 m, 16 July-11 Aug. 1977. "Epiphytic vine. Petals yellow-brown; anthers orange."

Topobea glabrescens Triana (recent collections, both from Choco, Colombia: Gentry & Fallen 17846, Yuto-Iloro, elev. 100 m; Forero, Jaramillo, & McElroy 1160, Quibdó-Guayaquil, elev. 40 m) has leaf blades beneath completely covered with stellulate or pinoid-stellulate hairs, sparsely glandular-setose pedicels and bracts, the torus within densely fine-setulose, and the ovary collar densely pinoid-setulose; T. insignis Triana (vide Caldasia 11: 87-89. 1971) has larger bracts, fine-setulose pedicels, and larger flowers with barely oblate-lobed calyx limb; and T. anisophylla Triana has fine-ciliolate branchlet nodes, proportionately narrower leaves with more closely spaced secondary veins, larger bracts, and longer calyx lobes. None of the above species shows foliar domatia. In secondary leaf venation and domatia as well as floral bracts, T. dodsonorum resembles T. pittieri Cogn., an isophyllous species with truncate calyx limb and conic ovary apex. Two other anisophyllous species of Topobea have been described from the Pacific coast of Colombia; both differ from T. dodsonorum in the much smaller plinerved leaf blades acute at the base, rounded outer floral bracts, rounded-cordulate calyx lobes, smaller petals, relatively thicker anthers, and conic ovary apices. These Colombian taxa, T. alternifolia Gleason and T. reducta Gleason, do show obscure foliar domatia; while Gleason transferred the first of these to Blakea, both have the dorsal confluent anther pore of Topobea and are at most subspecifically distinct from one another.

TOPOBEA ANISOPHYLLA Triana subsp. ECUADORENSIS Wurdack, subsp. nov.

Ramulorum foliorumque pubescentia brevior petiolis paulo brevioribus laminis paulo tenuioribus differt.

Type Collection: J. A. Steyermark 54211 (holotype F 1207319; isotypes NY, US), collected in rich moist forest along trail from Sambotambo, following headwaters of Río Moro

Moro, south to Buenaventura at and along highway to Portovelo, Prov. El Oro, Ecuador, elev. 1035-1800 m, 29 Aug. 1943. "Shrub 15 ft. tall; leaves firmly membranaceous, deeply sulcate above, nerves below deeply raised; petals white; anthers yellow."

Paratype: Sodiros s. n. (BR), without definite locality.

The typical subspecies, known to me only from the type collection (Triana 4103, BM, NY) and Cuatrecasas 23733 (F, NY, US), both from El Valle, Colombia, has the branchlets, petioles, and primary leaf veins beneath densely floccose-setulose with fine densely barbellate hairs to 1 mm long, petioles 0.3-0.5 cm long on the larger leaves, and rigid-membranaceous leaf blades. In the Ecuadorian population, the caducous pinoid cauline hairs are only to ca. 0.3 mm long, moderately dense on the very young branchlets, and sparse (and only ca. 0.1 mm long) on the primary leaf veins beneath; the petioles are 0.1(-0.2) mm long in the large leaves; and the leaf blades (dry) are membranaceous. Cogniaux had annotated the Sodiros collection as an undescribed species.

TOPOBEA TOACHIENSIS Wurdack, sp. nov.

T. anisophyllae Triana arcte affinis, foliis proportionaliter angustioribus hypanthiis glabris antherarum connectivis ecalcaratis differt.

Ramuli primum obtuso-quadrangulati demum teretes sicut petioli laminarum subtus venae primariae pedicellique pilis pinoideis 0.1-0.25 mm longis deciduis sparsiuscule puberuli. Folia in quoque pari valde dimorphica membranacea essentialiter integra (obscura distanterque crenulata) in superficie ubique glabra nervis secundariis ca. 0.7-0.8 mm inter se distantibus supra paullo insculptis subtus paullulo elevatis. Folia maiora: lamina (acumine 1.5-2.5 cm incluso) 8-12.5 X 2-3.5 cm anguste oblongo-elliptica apice gradatim caudato-acuminato basi rotundata et paulo (ca. 0.1 cm) auriculata, breviter (usque ad 0.5 cm) 7-pseudoplinervata; petioli 0.1-0.2 cm longi. Folia minora sessilia 1-2 X 0.6-1.1 cm (acumine 0.2-0.3 cm longo incluso) ovato-elliptica apice subabrupte hebeti-acuminato basi paulo cordulata, 5-nervata. Flores 6-meri in quoque nodo superiore plerumque 3 (uno in foliorum minorum axilla; duo in foliorum maiorum axilla), pedicellis gracilibus 25-35 mm longis, bracteis membranaceis omnino liberis obovato-oblongis apice hebeti-acuto obscure sparse caduceque stellulato-furfuraceis; bractae exteriores 5-7 X 2-2.5 mm; bractae interiores 5 X 2.1-2.4 mm. Hypanthium (ad torum) 3 mm longum glabrum; torus intus sparsissime glandulis 0.05 mm longis armatus; calycis tubus 0.5 mm longus, lobis 2.7 X 1.3-1.5 mm oblongis acutis obscure caduceque furfuraceis setula decidua 0.1-0.2 mm longa terminatis. Petala 7.5-8 X 4.8-5 mm oblongo-obovata apice obtuso apicem versus sparse obscureque (0.03 mm) ciliolata alioqui glabra. Filamenta 2.5-3 mm longa; antherarum thecae 3 X 0.7 X 0.6 mm lanceatae non cohaerentes, poro 0.2 mm diam. dorsaliter inclinato, connectivo ad basim ecalcarato. Stigma non expansum; stylus 5.7 X 0.3-0.1 mm glaber in ovarii collo 0.7 mm immersus; ovarium

4-loculare et $1/3$ inferum cono 2.3 mm longo (collo incluso) glabro.

Type Collection: C. Játiva & C. Epling 536 (holotype US 2644199; isotypes NY, S), collected in virgin forest along Río Toachi near Santo Domingo, Prov. Pichincha, Ecuador, elev. 700 m, 18 July 1963. "Flowers white."

Topobea anisophylla has leaf blades with length/width ratio (exclusive of the acumen) mostly 2-2.6 (rather than 3-3.5), hypanthium densely puberulous with pinoid-stellulate hairs, and anther connectives with a dorso-basal descending tooth ca. 0.25 mm long. In vegetative pubescence and leaf consistency, T. toachiensis is like T. anisophylla subsp. ecuadorensis, but with larger petals and anthers.

NOTES ON NEW AND NOTEWORTHY PLANTS. CVII

Harold N. Moldenke

VITEZ ELMERI Moldenke, sp. nov.

Arbor parva vel frutex, ramulis ramisque gracilibus dense fusco-pubescentibus; foliis decussato-oppositis plerumque 5-foliolatis; petiolis gracillimis 2--4 cm. longis dense fusco-pubescentibus; laminis anguste lanceolatis integerrimis ad basin et apicem acuminatis supra puberulis subtus densissime fusco-pubescentibus; inflorescentiis terminalibus paniculatis parvis ubique dense fusco-pubescentibus vel puberulis; cymulis brevissime stipitatis; pedicellis nullis vel subnullis.

Small tree or shrub; branches and branchlets slender, subterete or obscurely subtetragonal, very densely fuscous-pubescent throughout; leaves decussate-opposite, mostly 5-foliolate; petioles very slender, 2--4 cm. long, densely fuscous-pubescent like the branchlets; leaflets unequal in size, narrowly lanceolate, nigrescent or brunescent in drying, membranous, darker above than beneath but not at all whitish beneath, entire, decidedly acuminate at both ends, the central one 6--8 cm. long and 1.5--2 cm. wide, rather densely puberulent above, very densely fuscous-pubescent beneath with distinct hairs, obsoletely petiolulate (but appearing as though petiolulate because of the basal leaflet acumination); inflorescence terminal, paniculate, small, with about 3 pairs of short ascending branches, densely fuscous-puberulent or -pubescent throughout, bracteolate, the small cymules very shortly stipitate; pedicels absent or practically so in anthesis; bractlets linear, 1.5--5 mm. long.